CLAIMS

1. A method of detecting, and optionally selecting, a DNA sequence, **characterized** in that the DNA sequence to be detected possesses a stable expression-enhancing quality, which method comprises the steps of

1) the cloning in a vector of DNA fragments having a size of <5000 base pairs between i) a DNA sequence involved in the induction of gene-transcription repressing chromatin, and ii) a reporter gene comprising a promotor, resulting in a variety of a fragment-comprising vectors, wherein the distance between the DNA sequence involved in the induction of the transcription of gene-repressing chromatin and the reporter gene is fewer than 5000 base pairs;

2) introducing the vectors into host cells, in which host cells the promotor may be active but induction of the transcription of gene-repressing chromatin in the vectors results in the repression of the transcription of the reporter gene; and

3) subjecting the host cells to a selection in order to identify a host cell exhibiting reporter gene-activity.

2. A method according to claim 1, **characterized** in that the selection in step 3) occurs by using a reporter gene which provides resistance to a growth inhibitor and the host cells are cultivated in the presence of the growth inhibitor.

3. A method according to claim 2, **characterized** in that the growth inhibitor is present in a concentration sufficiently high to kill host cells in which the gene providing resistance to the growth inhibitor is not active.

4. A method according to claim 2 or 3, **characterized** in that an antibiotic is used as the growth inhibitor and the reporter gene is a gene providing resistance to the antibiotic.

5. A method according to claim 1, **characterized** in that the reporter gene codes for Green Fluorescent Protein.

6. A method according to claim 5, **characterized** in that fluorescent host cells are separated from non-fluorescent host cells by means of a Fluorescence-Activated Cell Sorter (FACS).

7. A method according to claim 1, **characterized** in that the reporter gene is luciferase.

8. A method according to ~~any of the preceding~~ claims 4, **characterized** in that the fragments have a size of substantially between 2000 - 3000 base pairs.

9. A method according to ~~any of the preceding~~ claims 8, **characterized** in that the DNA sequence involved with the transcription induction of gene-repressing chromatin is a DNA sequence that is recognized by a heterochromatin-binding protein comprising HP1 which HP1-comprising complex is expressed in the host cell.

10. A method according to ~~any of the~~ claims ~~1 to~~ 8, **characterized** in that the DNA sequence involved with the transcription induction of gene-repressing chromatin is a DNA sequence that is recognized by a complex comprising a Polycomb-group (Pc-G) protein, and the Polycomb-group protein-comprising complex is expressed in the host cell.

11. A method according to ~~any of the~~ claims ~~1 to~~ 8, **characterized** in that the DNA sequence involved with the transcription induction of gene-repressing chromatin is a DNA sequence that is recognized by a complex possessing a histone deacetylase activity, and the histone deacetylase activity-possessing complex is expressed in the host cell.

12. A method according to ~~any of the~~ claims ~~1 to~~ 8, **characterized** in that the DNA sequence involved in the transcription induction of gene-repressing chromatin is a DNA sequence that is recognized by a protein complex comprising MeCP2 (methyl-CpG-binding protein 2), and the MeCP2-comprising complex is expressed in the host cell.

13. A method according to ~~any of the preceding~~ claims 8, **characterized** in that the DNA sequence involved with the transcription induction of gene-repressing

chromatin is a DNA sequence that is selectively recognized by at least one DNA-binding protein and the organism also expresses a protein complex comprising i) a first part selectively binding the DNA sequence, and ii) a second part inducing the formation of chromatin in which the transcription is repressed.

14. A method according to claim 13, **characterized** in that the protein complex comprises a fusion protein.

15. A method according to claim 14, **characterized** in that the first part is a part binding the DNA-binding site of LexA-DNA or GAL4-DNA.

16. A method according to any of the preceding claims, **characterized** in that the organism in step 1) is selected from the group comprising a plant and a vertebrate.

17. A method according to claim 16, **characterized** in that the vertebrate is a mammal.

18. A method according to ~~any of the preceding~~ claims 8, **characterized** in that the vector is an episomally replicating vector.

19. A method according to ~~any of the preceding~~ claims 18, **characterized** in that the vector comprises a replication origin from the Epstein-Barr virus (EBV), OriP, and a nuclear antigen (EBNA1).

20. A DNA sequence selected from i) a DNA sequence isolated from a plant or vertebrate, or derivatives thereof, and ii) a synthetic DNA sequence or one constructed by means of genetic engineering, which DNA sequence is a repression-inhibiting sequence which, by the method according to the present invention can be detected, selected and optionally cloned.

21. A DNA sequence selected from i) a DNA sequence isolated from a plant or vertebrate, or derivatives thereof, and ii) a synthetic DNA sequence or one constructed by means of genetic engineering, which DNA sequence is detected, selected and optionally cloned by means of the method according to ~~any of the~~ claims 18 ~~1 to 19~~.

22. A method of making a DNA construct comprising a gene that is to be expressed stably, wherein a stable

expression-promoting DNA sequence is **integrated** in accordance with claim ~~20 or~~ 21 in fewer than 2000 bp of the gene.

23. A method according to claim 22, **characterized** in that the stable expression-enhancing DNA sequence will be integrated both upstream and downstream from the gene.

24. A use of the DNA construct obtained in accordance with claim 22 ~~or 23~~, wherein the DNA construct is a vector for the transformation of an organism.

add (B1)